#Write a Python program to output the jersey number of the player. Player's name is given in a file named 'player.txt' resides in the same folder as
#python program file.
#The output of the python program is only jersey number.
#For example, if the jersey number of the player is 99. Then output must be 99 only. Note: No spaces.

```
import sys
import os
import psycopg2

file = open("player.txt", "r")
name = file.read()

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()

    query = "select jersey_no from players where name = '{}'".format(name)

    cursor.execute(query)

    result = cursor.fetchall()

    for res in result:
        print(res[0])

    cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
    print(error)
finally:
    connection.close
```

#Write a Python program to print the roll number of the student. Student's first name is given in a file named 'name.txt' resides in the same folder as
#python program file.
#The output of the python program is only roll number.
#For example, if the first name of the student is 'Vikas'. Then output must be CS01 only. Note: No spaces.

```
import sys
import os
import psycopg2

file = open("name.txt","r")
name = file.read()

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()
    query = "select roll_no from students where student_fname = '{}'".format(name)

    cursor.execute(query)

    result = cursor.fetchall()

    for res in result:
        print(res[0])

    cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
    print(error)
finally:
    connection.close



#write a Python program to print the playground of the given team id. team_id is
given in a file named 'team.txt' resides in the same folder as python program file.
# • The output of the python program is only playground name.
# • For example, if the team_id is 'T0002' . Then output must be Villa Park only


import sys
import os
import psycopg2

file = open("team.txt","r")
team_id = file.read()

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
```

```
            password = os.environ.get('PGPASSWORD'),
            host = os.environ.get('PGHOST'),
            port = os.environ.get('PGPORT'))

        cursor = connection.cursor()
        query = "select playground from teams where team_id = '{}'".format(team_id)

        cursor.execute(query)

        result = cursor.fetchall()

        for res in result:
            print(res[0])

        cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
        print(error)
finally:
        connection.close
```

#Write a Python program to print the student's first name, the corresponding department name and the respective year of date of birth, if the year is even then print "Even" or else "Odd".
#Student's first name is given in a file named 'name.txt' resides in the same folder as python program file.

#The output of the python program is only student's first name, the corresponding department name and year of date of birth, if the year is even then "Even" or else "Odd".
#For example, 'Suman' and 'Computer Science' is the name and department name of the student. '2002' is the year he was born in. '2002' is even. Then, the final output will be Suman,Computer Science,Even only. Note: No spaces.
#For example, 'Vinod' and 'Electrical Engineering' is the name and department name of the student. '2003' is the year he was born in. '2003' is not even. Then, the final output will be Vinod,Electrical Engineering,Odd only. Note: No spaces.

```
import sys
import os
import psycopg2

file = open("name.txt","r")
name = file.read()

try:
        connection = psycopg2.connect(
            database = sys.argv[1],
            user = os.environ.get('PGUSER'),
```

```
            password = os.environ.get('PGPASSWORD'),
            host = os.environ.get('PGHOST'),
            port = os.environ.get('PGPORT'))

        cursor =connection.cursor()
        query ="select students.student_fname, departments.department_name,
students.dob from students,departments where students.student_fname = '{}' and
departments.department_code = students.department_code".format(name)

        cursor.execute(query)

        result = cursor.fetchall()

        for res in result:
            if res[2].year%2==0:
                print(res[0]+","+res[1]+","+"Even")
            else:
                print(res[0]+","+res[1]+","+"Odd")

        cursor.close()
except(Execption, psycopg2.DatabaseError) as error:
        print(error)
finally:
        connection.close
```

#Write a Python program to print the name and date of birth, year of joining(since) is a leap year as “Yes” or “No” of the manager of the player.
#Player's name is given in a file named 'player.txt' resides in the same folder as python program file.

#The output of the python program is only manager's name, date of birth, year of joining is a leap year as “Yes” or “No”.

#For example, 'Adom' and '1991-02-17' is the name and date of birth of the manager of the player's name 'Jerry'. '2020-02-15' is the year of joining. 2020 is a leap year. Then, the final output will be Adom,1991-02-17,Yes only. Note: No spaces and the date format should be the same as shown.
#For example, 'Brandon' and '1995-02-15' is the name and date of birth of the manager of the player's name 'Kabir'. '2019-04-02' is the year of joining. 2019 is not a leap year. Then, the final output will be Brandon,1995-02-15,No only. Note: No spaces and the date format should be the same as shown.

```
import sys
import os
import psycopg2

file = open("player.txt","r")
```

```
p_name = file.read()

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()
    query = "select managers.name, managers.dob, managers.since from
managers,players where players.name = '{}' and players.team_id =
managers.team_id".format(p_name)

    cursor.execute(query)

    result = cursor.fetchall()

    def Leap(year):
        if (year % 4 == 0) and (year % 100 != 0):
            return True
        elif year%100 == 0 and (year % 400 == 0):
            return True
        else:
            return False

    for res in result:
        if Leap(res[2].year):
            print(res[0]+","+str(res[1])+","+"Yes")
        else:
            print(res[0]+","+str(res[1])+","+"No")

    cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
    print(error)
finally:
    connection.close



#In this question, you have to write a Python program to print the names of the
players and the team of each player of all those players whose jersey number is a
prime number.
#The list should be ordered in reverse alphabetical order of player names. If two or
more players have the same name, then further sorting should be done on the team
name, again in reverse alphabetical order.
#The format of output is as given below:
#Name of the player, followed by a comma (,), then a space and then the team
name.
```

```
#For example, if Arjun has jersey number 5 and is playing for All Stars and Pranav,
with jersey number 7, is playing for team Amigos, then the output will be:
#Pranav, Amigos
#Arjun, All Stars

import sys
import os
import psycopg2

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()
    query = "select players.name, teams.name, players.jersey_no from teams,
players where players.team_id = teams.team_id"

    cursor.execute(query)

    result = cursor.fetchall()

    def prime(n):
        if n<=1:
            return False
        for i in range(2,n):
            if n%i==0:
                return False
        return True
    final_res = []
    for res in result:
        if prime(res[2]):
            final_res.append(res[0]+", "+res[1])

    final_res.sort(reverse=True)

    for final in final_res:
        print(final)

    cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
    print(error)
finally:
    connection.close
```

#In this problem, you have to write a Python program to print an encoding of the ids of the teams whose jersey colour at home is different from the jersey colour when they play away from home.
#The encoding must be using a shift cipher, which is detailed below.
#An alphabet is mapped to another alphabet as follows. For a given alphabet α, let pos be the position at which α occurs in the alphabet listing (A at 1, B at 2, …. Z at 26). Then the encoding of α is the alphabet at the position (pos + 7) mod 26.
#For example, if M is the alphabet, then the position at which M occurs in the alphabet listing is 13. Then, the encoding of M is the alphabet at the position (13 + 7) mod 26 = 20, which is T.
#For each digit β, the encoding of β is (β+7) mod 10.
#For example, if 3 is the digit, then the encoding of 3 is the number (3 + 7) mod 10 = 0.
#The ids should be listed in the ascending order before performing the encoding.
#Each line in the output of the program must correspond to one row retrieved from the table.

```
import sys
import os
import psycopg2

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()
    query = "select team_id from teams where jersey_home_color <>
jersey_away_color"

    cursor.execute(query)

    result = cursor.fetchall()

    for res in result:
        new_res = chr(((ord(res[0][0])-65+7)%26)+65)
        for i in res[0][1:]:
            new_res += str((int(i)+7)%10)
        print(new_res)

    cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
    print(error)
finally:
    connection.close
```

#Write a Python program to print the ISBN numbers of books which are published in a given year. Here, the year is obtained as the value of function L(x) (given after the sample output) at x. You have to read the value of x from the input file "number.txt", and use it to find the value of L(x). Your program must assume that the file number.txt resides in the same folder as your Python program.

#You have to iterate through the list and print each value separately as shown in the output below:

#9789352921171
#9789351343202
#9789353333380
#The line function is given below:
#L(x) = 2000 + 5*x + 3

```
import sys
import os
import psycopg2

file = open("number.txt","r")
x = file.read()

def L(x):
    return (2000+(5*x)+3)
year = L(int(x))

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()
    query = "select ISBN_no from book_catalogue where year = '{}'".format(year)

    cursor.execute(query)

    result = cursor.fetchall()

    for res in result:
        print(res[0])

    cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
    print(error)
finally:
```

```
    connection.close
```

#In this question, you must write a Python program to output the name of the main referee for a given match date (in yyyy-mm-dd format). The input to your program is a file named “date.txt” that has the match date as the first word of the file. Your program must assume that date.txt resides in the same folder as your Python program.

#The output name has to be formatted as follows. The last name is displayed followed by the initials of the first name, then a full stop, a space and then the initials of the middle name (if the middle name exists), followed by a full stop.

#For example, if the name of the main referee is “Kennedy Sapam”, the output must be ”Sapam K.”

#If the name of the main referee is “Asit Kumar Sarkar”, the output must be ”Sarkar A. K.”

```
import sys
import os
import psycopg2

file = open('date.txt', 'r')
date = file.read()

try:
    connection = psycopg2.connect(
        database = sys.argv[1],
        user = os.environ.get('PGUSER'),
        password = os.environ.get('PGPASSWORD'),
        host = os.environ.get('PGHOST'),
        port = os.environ.get('PGPORT'))

    cursor = connection.cursor()

    query = "select referees.name from match_referees, matches, referees where match_referees.match_num = matches.match_num and matches.match_date = '{}' and match_referees.referee = referees.referee_id".format(date)

    cursor.execute(query)

    result_of_query = cursor.fetchall()

    for result in result_of_query:
        list_of_name = list(map(str, result[0].split(" ")))
        final_result = list_of_name[-1]
        for name in list_of_name[:-1]:
```

```
                final_result += " "+name[0]+"."
        print(final_result)

        cursor.close()
except(Exception, psycopg2.DatabaseError) as error:
        print(error)
finally:
        connection.close
```

**Formatting a string :**

```
import sys, os
import psycopg2 as ps
import pandas as pd
database = sys.argv[1]    #name of the database is obtained from the
command line argument
user = os.environ.get('PGUSER')
password = os.environ.get('PGPASSWORD')
host = os.environ.get('PGHOST')
port = os.environ.get('PGPORT')

f = open('date.txt')
for i in f:
        d = i
q = '''select r.name, mr.referee from public.matches m
left join public.match_referees mr on m.match_num=mr.match_num
left join public.referees r on r.referee_id=mr.referee where m.match_date = '''
+ """+d+"""
conn =
ps.connect(database=database,user=user,password=password,host=host,por
t=port)
cur = conn.cursor()
cur.execute(q)
t = cur.fetchall()
for j in t:
        temp = ''
        p=j[0].split(' ')
        for k in p[:-1]:
                temp=temp+k[0]+'. '
        print(p[-1],temp[:-1])

cur.close()
conn.close()
```

**Computing the cosine:**

```
f = open('parameter.txt')
for i in f:
	p = i

import sys, os
import psycopg2 as ps
import math
database = sys.argv[1]    #name of the database is obtained from the
command line argument
user = os.environ.get('PGUSER')
password = os.environ.get('PGPASSWORD')
host = os.environ.get('PGHOST')
port = os.environ.get('PGPORT')

q = '''select sum(m.host_team_score) as Total_Score from matches m
left join match_referees mr on m.match_num=mr.match_num
left join teams t on t.team_id=m.host_team_id
where m.host_team_score>m.guest_team_score and t.name like ''' + """ + p
+"%'''
conn =
ps.connect(database=database,user=user,password=password,host=host,por
t=port)
cur = conn.cursor()
cur.execute(q)
t = cur.fetchall()
for j in t:
	n = j[0]
	print(round(math.cos(n*10*(math.pi/180)),2))
cur.close()
conn.close()
```

**Referee id:**

```
import sys
import os
import psycopg2
file = open ('id.txt', 'r')
d = file.read ()

try:
```

```
connection = psycopg2.connect (
database = sys.argv [1],
user = os.environ. get ('PUSER'),
host = os.environ. get ( 'PGHOST''),
password = os.environ. get ( 'PGPASSWORD'),
port = os.environ.get ( 'PGPORT'))
cursor = connection.cursor ()
query = ''select name from referees where referee id = '{\'".format(id)

cursor.execute (query)

result = cursor.fetchall ()

for res in result:
print(res [0])

cursor.close ()
except (Exception, psycopg2. DatabaseError) as error:

print (error)
finally:
if connection:

connection.close ()
```